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REMARKS
ON THE
SICKNESS AND MORTALITY
AMONG THE
EMIGRANTS TO CANADA IN 1847;

WITH SUGGESTIONS FOR AN IMPROVED METHOD OF
REGULATING FUTURE EMIGRATION,

*In a Letter to Sir William Burnett, M.D., K.C.H., F.R.S.,
Director-General of the Medical Department of the Navy.*

BY

T. STRATTON, M.D., EDINBURGH;

*Licentiate of the Royal College of Surgeons of Edinburgh;
Hon. Member Highland Society of Canada;
Corresponding Member Quebec Literary and Historical Society;
Member of the Toronto Medico-Chirurgical Society;
Surgeon, Royal Navy, Particular Service.*

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The number of emigrants that left the British Isles for Canada, in 1847, was three times greater than that in the season of 1846. The sickness and mortality among them, have been very great; and the distress and destitution thereby accruing to the surviving relatives, have been such as to claim from the humane all their sympathy, and from those in authority all their ability to prevent or to remedy such evils.

The following is a copy of a report by Mr. Buchanan, Chief Emigrant Agent at Quebec, of the number of

emigrants that arrived at Quebec and Montreal during the season of 1847, up to the 10th of November, and compared with the total number that arrived in 1846; there is also stated the mortality in 1847:—

Embarked from	Steer. age.	In-fants	Cabin.	1846. Total.	Steer. age.	In-fants	Cabin	1847. Total.
Scotland,	1494	31	120	1645	3462	174	116	3752
England,	8435	455	273	9163	29833	2305	190	32338
Ireland,	20169	673	207	21049	51129	2835	365	54329
Germany,	875	21		896	7458	226	13	7697
Total.	30973	1180	600	32753	91882	5540	684	98106
Deduct last year's emigrants.					30973	1180	600	32753
Additional number in 1847.					60909	4360	84	65353

Number that died on the passage,	5,293
Admitted into Grosse Isle Quarantine Hospital	8,563,
of whom died,	3,452
Died in Quebec Marine and Emigrant Hospital, and in the city of Quebec, up to 9th October,	1,041
Died in Montreal Emigrant Hospital, and in the city of Montreal, up to 1st November,	3,579

Total deaths, . . . 13,365

(Signed.)

A. C. Buchanan, Chief Agent.

Up to the 1st of November, and as far inland as Montreal, one emigrant in every seven had died; many of those who passed on from Montreal, sickened and died at one or other of the different places on the route—Prescott, Brockville, Kingston, Toronto, St. Catharines, Brantford, New London, or Amherstburg; and during November and December, there have been many deaths in the different emigrant hospitals, so that it is understating the mortality to say, that of those who left Britain, one person in every five, was dead by the end of the year. The number that died on the passage is 5,293. I believe I am correct in stating, that only three or four ships carried surgeons, so that almost the whole of this large number, died in a situation where there was no medical aid. The proportion

of passage deaths to passengers is about one in eighteen, which is in sad contrast to what it was a few years before, when it was one in two hundred, (as stated by Mr. Hawes, quoted in Dr. Combe's excellent letter on Emigration, in the *Times* of 17th September, 1847.)

In the Kingston (Canada,) Emigrant Hospital, from the beginning of the season up to the 18th of October, there were 1959 admissions, and 707 deaths, the mortality being 35 per cent., and there remained 431 patients in hospital.

In the Toronto Emigrant Hospital, up to the 22nd of October, there were 3300 admissions, and 757 deaths, being about 22 per cent., and 739 patients remained.

SICKNESS.

In the ships where there was so much mortality, (in some vessels one-third, and in others, three-fifths of the passengers died,) there was, of course, among the other passengers a great amount of sickness, weakening them for one, two, or three months, and incapacitating them for labour on their arrival in America.

CAUSES OF THE SICKNESS AND MORTALITY.

The sickness and mortality were almost entirely from fever, (typhus fever, and that variety of it called ship-fever,) and dysentery, and in some of the ships sailing from ports in Ireland, or from Liverpool, with Irish emigrants, we may reasonably suppose that some of the passengers might embark infected with typhus, and this would, in a week or so, develop itself, and afterwards spread among the passengers. Dysentery arises sometimes from improper and imperfectly-cooked food, and, in certain circumstances, it, also, is occasionally

infectious, so that it would, perhaps, spread in the same way as the fever.

The spreading of these diseases would have been much less, if it had not been aided by want of medical advice—an over crowded state of the ship—an absence of due cleanliness—want of exercise on deck—and of proper cooking of the food.

But, on the other hand, in many of the ships, there is no reason to suppose that typhus, or its infection, or dysentery, was embarked, and the fever which appeared after leaving port, is sufficiently accounted for, by the over-crowding, and the deficient ventilation, aided by the predisposing cause of low diet. ^{fever} ~~typhus~~ arising in this way, afterwards spreads by infection, and so the remaining passengers ran two chances of being taken ill—that is, from the original cause, and from infection.

The same remark may be made regarding the dysentery; it would, in the first instance, arise from the uncooked victuals, and improper diet, and would then both continue to be produced by the original cause, and, perhaps, also be communicated by infection.* The sickness from embarked typhus, or its infection, and from dysentery, might have been much checked, and the sickness from typhus, or dysentery, springing up on board, might have been prevented by proper regulations. In some ships, from obstacles thrown in their way with regard to cooking, and, in others, from laziness, carelessness, or whatever it may be called, the passengers often did not cook their provisions at all. In others, in obeying the calls of nature, they invariably did so into the hold, and sometimes would not even leave their sleeping-

* Some physicians consider that dysentery is not infectious; others, that it is so, occasionally; and others, again, that it is so, only when complicated with infectious fever.

berths ; sometimes they would not allow the captain or crew to come down among them, afraid of being forced to wash, and to go on deck ; in others, again, they were smoked out, and so forced to go on deck ; and however well-intended on the part of the master this may have been, it cannot be forgotten that some, and, perhaps, many, may have been too weak either to move, or, even to be moved. Considering all these things, instead of wondering that the mortality was so great, we may feel surprised that it was not greater.

THE PASSENGERS' ACT.

The Acts of the Imperial Parliament by which emigration to North America is regulated, are the *Passengers' Act*, which was passed on the 12th August 1842, and the *Amended Passengers' Act*, which was passed on the 22d July 1847. Of the former Act—

Section 2. Exempts passenger-ships to North America from having to carry a surgeon. It prohibits a ship from carrying more than one person to every five register tons ; and it enacts that, on the lower deck, each passenger is to have ten superficial feet of space “unoccupied by stores not being the personal luggage of passengers.”

Note.—Ships ought to be obliged to carry surgeons, in cases to be afterwards mentioned. The Act ought to specify so many cubic feet of space for each passenger, *exclusive* of the space occupied by his personal baggage, for most emigrants have large chests or boxes taking up the room allowed for their owners. These boxes are often nearly empty, or, at best, contain apparel of little value even to those to whom they belong. This defect in the Act is a most important one, and ought to be immediately rectified.

Section 4 and 5. Omit to regulate the height of the

berths, and also the distance between any two rows of berths.

Note.—The height of the lower deck is *said* to be six feet, and the floor of the lower berth six inches above the deck, so that each berth ought to be, at least, two feet eight inches high. The space between any two rows of berths might be six or more feet.

Section 6. Provides that provisions be issued not less frequently than twice a week, and the following is the scale to be issued by the ship to those passengers who do not provide their own provisions: one pound a day of one of the following articles, namely, bread, biscuit, flour, oatmeal or rice, and half of the diet may be of potatoes, and five pounds of potatoes are to be considered as equivalent to a pound of one of the other articles.

Note.—Considering the improvidence of most of the emigrants, only one day's provisions ought to be issued at a time, as, when issued only twice a week, many of the passengers consume on that day the three or four days' provisions, and starve on the other days, and so injure themselves in three ways. Firstly, having nothing to eat on five days in the week; secondly, eating too much on the other two days; thirdly, when the intestinal canal is not distended by food to the usual extent, and on one day a quantity of it, and perhaps of a hard nature (as ship-biscuit), is eaten, painful distension of the canal, or griping, or inflammation, is apt to be induced. This irregularity in diet is also favourable to the production of diarrhœa and dysentery.

With regard to the *quality* of the diet:—Bread may be left out of the question, as, for any great number of persons on ship-board, there is no convenience for baking it. Oatmeal is much preferable to wheaten flour, and care ought to be taken, and very often is not taken, that it be cooked properly, and not taken with cold water only, and also that it be eaten with salt. Taking the diet as above, a good arrangement of it might be, on three days a week, half diet of potatoes, and half diet of

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oatmeal ; on two days, biscuit ; on one day, flour ; and on another day, rice ; and any deviation from this, to be towards oatmeal.

But with respect to the *quantity* of provisions, the above scale may do on an emergency, or for about a week ; for a fortnight, double the quantity might be issued, and for any longer period, about three times the allowance would not be too much for the purpose of landing the emigrants in the state of health and vigour necessary for their immediately engaging in laborious occupations. Tea and sugar ought to be issued daily, and beef or pork, if not daily, ought to be granted twice or thrice a week. A sufficiently full and varied diet will keep the emigrant in good health, and enable him to provide for himself and his family on his arrival ; while an unvaried diet, insufficient in quantity, predisposes him to disease, or actually induces it ; by a moderately liberal scale of victualling, the interests of both humanity and economy are at the same time served.

The scale in the Act was intended only for the emergency of the emigrant after his private stock of provisions might have been exhausted. In the past season, many emigrants embarked without any private stock at all. Either from their private store or from the ship, a suitable scale of diet might be, daily, a small quantity of potatoes or other vegetables ; tea and sugar sufficient for a morning and an evening meal ; a pound of bread, oatmeal, biscuit, or flour, and half a pound of beef or pork, the latter with pease-soup.

Section 10. Speaks of " the victualling of the crew and other persons (if any) on board."

Note.—The master, crew, cabin and steerage passengers, ought to be all numbered together ; referring to " other persons," is giving an opportunity for the vessel to have more passengers than the Act is *intended* to allow.

Section 13. In prescribing the number of boats to be carried by ships of a certain size, it might be specified that the boats are to be able to carry about *so many*

persons, as a ship may observe the *wording* of the Act, and still have boats unusually small, and insufficiently large for the object in view.

Section 18. Allows a ship that has cleared with an insufficient number of passengers, to embark others at other places, where there may be no custom-house officer, or emigration-agent, and consequently no check on the vessel's carrying more than the allowed number.

I heard of a ship that cleared with the full number of passengers, and then dropped a few miles down the river, and in the dusk, a number of carpenters came on board with wood, and in an hour or two, put up rows of berths in places where there was properly no room for them; then about 100, or more, emigrants came on board, and the ship sailed.

Section 51. States that "cabin-passengers" are not included among the "passengers."

Note. However the second section numbers the master and crew along with the passengers; they ought to be all numbered together, otherwise it leaves an opening for "evading the Act," as, if a ship has more than the allowed number of steerage-passengers, some of them, during the time of inspection, may be passed off as cabin-passengers, and others, as belonging to the crew.

Having thus made a few remarks on what is contained in the Act, I now beg to offer some observations on what is omitted in it.

The Act ought to prohibit the washing of the lower deck oftener than once a week, and not even then, without previously obtaining permission from the surgeon; the deck to be washed *after* the passengers have breakfasted, and before noon, and with no more water than is absolutely necessary. Much disease is produced on board ship, by the too frequent washing of the lower

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deck ; too much water also is generally used, and the consequence is, that a deck has hardly time to dry till it is washed again.

The bad results of this system are well known ; catarrh, rheumatism, and other complaints are induced in the case of robust seamen, and still more readily in the instance of women and children, and this for two reasons, both on account of their weakness, and from their being more in the damp atmosphere. In some of the emigrant ships, the washing of the lower deck interfered with the cooking of breakfast, and when delayed till the afternoon, the deck is not dry by the usual time of retiring to rest.

The Act ought to prohibit any sailing ship that carries more than 40 or 50 steerage-passengers, from leaving Britain for British North America at a date in the season later than the 1st of August (perhaps the 1st or the 15th July would be a better date), as when vessels arrive in October or November, emigrants have no time before winter, to settle on land, or easily, to obtain employment. The ship *Lord Ashburton* with 470 passengers* from Liverpool, arrived at Quebec on the 1st of November, and the *Richard Watson*, with 170 passengers from Sligo, arrived at the same port on the 7th November, a date much too late. In the latter vessel, there were several deaths from cold, some of the children having no clothing whatever, and their relatives not being able to spare them any of their own.

THE AMENDED PASSENGERS' ACT.

This Act makes the *Passengers' Act* apply to vessels carrying more than one person to every 25 register-tons, the former Act referring to thirty tons.

* Of whom 64 died on the passage ; by the time they reached Montreal there were 120 deaths among them ; in this ship the custom was for the passengers to eat their provisions uncooked.

OF THE EXPENSE OF THE EMIGRANT HOSPITALS IN
CANADA IN 1847.

I am informed, that up to the end of December, the expense of the Grosse Isle Quarantine establishment, and of the Emigrant hospitals in various parts of the province, has amounted to about £100,000 sterling, which is more than one pound sterling for each emigrant that left Britain for Canada; besides the above outlay by Government, there are the expenses of private subscriptions for maintaining widows and orphans. I am inclined to think, that by an improved scale of diet, and by every ship carrying a government-surgeon, nearly all of the above sickness, mortality, and expense might be avoided, and this at a cost which would be, perhaps, a tenth, or at most a fifth of the expenditure caused by the emigrant sickness in 1847.

OF APPOINTING SURGEONS TO EMIGRANT-SHIPS TO
NORTH AMERICA.

There are, at present, two things wanted in emigrant-ships to N. America, one is, to have a government-agent on board to prevent too many persons being embarked, and to see that the passengers have justice done them, with respect to their provisions, water, accommodations, convenience for cooking, ventilation &c; the other desideratum is, to have a surgeon, and some consider that it would be difficult, or impossible to procure as many medical men as would be required for the purpose, and there certainly will, and ought to be great difficulty in doing so, if the remunerating of them be left in the hands of the ship-owners, who have not the inclination to pay them according to the value of the services rendered.

The advantage of having a government-agent, and also a surgeon, may be conveniently combined, by the Act

requiring that every sailing-vessel to N. America, which carries more than 60 persons (master, crew, cabin and steerage-passengers included) shall have on board a naval medical officer, who shall be in the same position, and have the same charge and responsibility as the surgeon-superintendent of a convict-ship. A sum equal to his pay and expenses, might be charged by Government to the ship, and he, appointed and paid by the Admiralty, would be independent of the owners, and would see that the passengers were fairly treated in all respects, and that no more than the allowed number was embarked.

To ships carrying under 150 ^{persons} ~~passengers~~ (crew, cabin and steerage-passengers included), there might be appointed an Assistant-Surgeon of the Royal Navy of at least four years' standing; he, to have full-pay from the date of appointment, and for five weeks after the ship's arrival in the destined American port: to have travelling expenses from London, or elsewhere, to the British or Irish port of departure; to mess in the cabin with the master, and at the ship's expense; his connexion with the ship to cease on the emigrants leaving it; to have certain travelling expenses from Quebec, &c., to New York, Boston or Halifax, for the purpose of proceeding home by the first Halifax Mail Steamer, and in which his passage would be paid; also, that his remuneration might bear some proportion to his trouble, he might have allowed him some sum, say five shillings for each passenger landed in America.

To ships carrying more than 150 persons, a Surgeon of the Royal Navy to be appointed as above.

It has been said, that it would be impossible to obtain a sufficient number of surgeons for emigrant-ships, and certainly, even if sufficiently well paid, it would not be an easy matter to procure, from among civil surgeons, a

sufficient number, as it would never answer for a private practitioner to leave his practice for a few months, to embark on this service. But by having recourse to the navy medical department, there would be no difficulty; as on their return to Britain, if these medical officers did not make a second American voyage that season, some naval appointment would perhaps be falling vacant, or, in any case, they might, in the usual way, go on half-pay, for a short season. The period of service in emigrant-ships ought, of course, to count the same as service in one of Her Majesty's ships.

SUGGESTIONS FOR AN IMPROVED EMIGRATION SYSTEM.

I may now recapitulate some of the amendments I beg to propose on the present mode of conducting emigration to North America :—

1st. Every sailing-vessel carrying more than sixty persons, to have on board a naval medical officer.

2nd. No sailing-vessel having more than 40 or 50 steerage passengers, to be allowed to leave the British Isles for British North America at a date in the season later than the 1st of August, (perhaps the 1st or 15th of July would be a better date.)

3rd. The present scale of provisions to be re-considered, and the question entertained, whether it might not be made greater in quantity, and more varied in kind, with advantage, not only to the emigrants, but also to Government.

4th. Each passenger to have *so many* cubic feet of space, *exclusive of the room occupied by his personal baggage.*

5th. Several other corrections of, and additions to, the *Passengers' Act*, are given above, and I may now conclude these brief remarks with observing that

although this letter be addressed to Sir William Burnett, M.D., I have introduced some medical details and explanations, from considering that it may come under the notice of non-professional readers.

For the last four months, since August 1847, I have been constantly engaged, professionally, in the emigrant hospitals of Grosse Isle, Quebec, or Montreal, and have had ample and varied opportunities of witnessing the condition of the emigrants, both healthy and sick.

I have been occupied in making observations on the disinfecting fluids of Sir William Burnett, M.D., and of Mr. Ledoyen, the former of which is composed of the chloride of zinc, and the latter of the nitrate of lead; and after a sufficiently long observation of the effects of both, I give a decided preference to the fluid of Sir William Burnett.

The solution of the chloride of zinc possesses several great recommendations, and these are not counter-balanced in the least by any inconvenient results. It is much superior to the solution of the nitrate of lead, both, positively, and also on account of Mr. Ledoyen's fluid, like the other preparations of lead, being liable to produce one or other of their long-known bad effects, such as colic, palsy, apoplexy, wasting of the body, permanent decrepitude, and particularly in typhus, a depressing effect which is the exact opposite of the one that is required in that disease. The proprietors of the Ledoyen fluid used it in considerable quantity in three cases of typhus; cloths wet with it, were applied to nearly the whole surface of the body. These three cases were, I believe, the only instances in Canada where the fluid was much applied to individual patients ill of typhus, and all of them ended fatally.

Laying aside, for a moment, considerations of

humanity, it is, indeed, singularly absurd and ridiculous that the proprietors of Mr. Ledoyen's fluid should have recommended it as a certain cure for typhus, when it so happens, that on account of its sedative and depressing effects, it is positively injurious, and apt to be fatal.

On the lower decks of emigrant-ships, ventilation ought to be as much attended to, as the weather will permit, and it will be highly conducive to comfort and health to use Sir William Burnett's Fluid daily. The proportion of one ounce of the strong fluid to every ten persons, is sufficient in ordinary cases; where there is much dysentery, twice or thrice this quantity may be used.

During the past season, in Canada, a great many medical men, clergymen, magistrates, and others, have died of emigrant-fever; and, emigrants going out as servants to places in the country, have, soon after, taken fever, and died; and the disease has extended itself fatally to several others in the house.

I have written these brief remarks in the midst of more pressing engagements, and have not done the subject the justice which its importance merits; but I hope I have said enough to show that there are two ways of managing British Emigration to North America. One is, that, of imperfect regulations, imperfectly carried out, the consequences of which are, great sickness and mortality among the emigrants, both on the passage, and after their arrival; distress and destitution among the surviving widows and orphans; the loss of many valuable lives in Canada from the spread of emigrant-fever throughout the Province; expense to private individuals in providing for widows and orphans, and the outlay, by Government, of about £100,000 sterling, in supporting emigrant hospitals. And, on the other

hand, I have endeavoured to show that, by amending the *Passengers' Act*, as is herein proposed, all the above evils may be entirely, or almost entirely prevented; added to which, the expense of the plan would probably be about one-tenth, or one-fifth of the sum that the emigrant sickness of 1847 has cost, and a successful attention would thereby be given to the interests, both of humanity and of economy.

T. STRATTON, M. D., R. N.

Montreal, 1st January, 1848.

P. S.—Since the above was written, it was officially announced on the 2nd of March, in the Legislative Assembly, that for the relief of emigrants this season, there had been already expended the sum of £148,000 currency, and about £12,000 more remained to be paid. Besides this total of £160,000 currency, or £131,000 sterling, the expense of the emigrant hospitals for ten weeks more, up to the middle of May, properly belongs to the season of 1847.

T. S.

Montreal, 4th March, 1848.

